



Collaborative foresight: Complementing long-horizon strategic planning



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ABSTRACT

An action case study demonstrates an effective integration of collaborative planning using long-range foresight in a hierarchical government research organization. The purpose of the study was to evaluate the effectiveness of collaborative, bottom-up strategic planning as a complement to top-down strategizing. Large research institutions plan investment over long time horizons and must cope with significant uncertainty, complexity, and mandate changes. Collaborative foresight enhances organizational resilience by improving ideation, problem definition, and consensus in long-horizon strategies. It increases the variety of perspectives in scenario creation, resulting in improved strategic options. Structured Dialogic Design (SDD) was employed as a complementary strategic planning method to the mandated Capabilities-Based Planning (CBP) process. The two methods were conducted in parallel sessions with different organizational participants, strictly limiting information sharing between teams. Participants using SDD to plan efficiently produced a detailed structure representing long-horizon strategic challenges and solution ideas. This collaborative foresight approach demonstrated strong consensus for organizational priorities defined in scenarios and investment pathways. The SDD method demonstrated that transactive and generative planning integrated with traditional rational planning and surpassed it by incorporating deep tacit knowledge from diverse participants. It also fostered organizational cohesion through facilitated collaboration in the planning sessions.

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1. Introduction

This study evaluated the effectiveness of facilitated collaborative foresight within a hierarchical organizational culture defined by a strong preference for rational, top-down strategic planning. The study was conducted in concert with a management proposal to merge six branches within a division of a large government research and development (R&D) organization. The study used collaborative foresight approach to strategic planning. Its purpose was to elicit a useful portfolio of future technology proposals for current investment

decisions applicable to a 20-year R&D strategic horizon, within the context of a newly reorganized R&D division.

The Sensors Directorate of the Air Force Research Laboratory (AFRL) employs traditional Capability-Based Planning (CBP), a rational planning process well understood by management. CBP is valued for the planning function of strategy-to-task alignment, which allocates work packages to strategic commitments.

Managers and senior technical advisors typically lead the planning for multi-year research investment in any large R&D organization, with only indirect inclusion of line personnel or junior staff. However, several risks are acknowledged when engaging more senior personnel. For one, primarily due to management time commitments, more senior members tend to expedite decisions under time pressure. An expectation for

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rapid closure encourages efficiency, and a group may therefore avoid challenging the dominant paradigms of programs and forecasts. In large institutions, the inclusion of *only* managers and technical advisors may lead to group-think and other group bias pathologies as they tend to rely on well-understood planning assumptions and share similar worldviews. Rational top-down planning may not be conducive to anticipating unforeseen shocks and critical uncertainties within long planning horizons. There are few accepted methods in the rational planning approach that enable managers in planning coordinator roles to pierce the embedded practices in a large hierarchical organization.

The traditional capabilities-based planning team consisted of managers and technical advisors, all experienced in long-range strategic planning. The CBP method was employed and aligned with the Strategy-to-Task framework [1] as shown in Fig. 1.

The Strategy-to-Task framework functions as a strong set of constraints for aligning program-level objectives with national level strategy from executive planning levels. Capabilities-based planning is a “top-down” approach to strategy, a hierarchical model intended to maintain strategic intent from the top-level objectives to the lowest “task” level in the execution. CBP and the strategy-to-task approach are powerful tools for strategic alignment and evolutionary improvement. They may have limited ability when applied to early lifecycle planning of emergent innovations, especially for long-term R&D programs in fields that are rapidly evolving.

The prevailing military culture, even in its research organization, reflects an organizational hierarchy and bureaucracy that may impede collaboration in strategic planning [2]. Yet in the present case, the planners were concerned with the risk of CBP producing a program investment plan insufficient to the complexity and uncertainty of long-term strategy. To evaluate a dual-track planning process as a process improvement, AFRL management agreed to a separate “bottom-up” planning session to complement the accepted top-down CBP method. The planners recognized that top-down planning for a 20-year R&D investment horizon could risk overlooking critical emerging trends in technology and research that a more diverse group might better inform. Therefore, AFRL managers selected Structured Dialogic Design¹ (SDD) as a bottom-up planning method to increase the variety of perspectives and inspire collaboration across competing organizational groups to improve overall investment planning quality. SDD was applied as a collaborative foresight methodology.

Both long-term strategic foresight and near-term investment scenarios were needed to complement the CBP sessions. Strategic foresight methods can be employed for identifying strategic options in highly uncertain future contexts. According to the well-known “diamond” of Popper [3] foresight methods often employ a mix of both evidence (e.g., horizon scanning) and creative methods (e.g., scenario fiction). Strategic foresight also blends both expertise (e.g.,

Delphi panels) and interaction (e.g. workshops). However, participatory collaboration among mixed participants is rarely indicated as a methodology for strategic foresight, even in the more creative techniques.

Ringland [4] suggests that senior management might adopt strategic foresight for surfacing assumptions and mental models, encouraging reflection, understanding complexity, and extending collective vision beyond the boundaries of organizational knowledge. Miles [5] and others have developed and advocated foresight methods for anticipating impacts of technology on markets, organizations and government policy. A systematic review of scenario methods [6] analyzed 101 source articles to map applications of scenarios in foresight and decision making across all reported sectors. No mentions of collaboration among diverse participants are found among the taxonomies and reviews. Foresight and scenario development are predominantly led and formulated by management. A key exception is the TIPS (transdisciplinary integrated planning and synthesis) process designated for multi-sectoral high-complexity strategic planning and decision making [7]. In complex cross-sector engagements where participants may have conflicting viewpoints and interests, a collaborative planning and consensus approach has been found helpful [8,9]. Yet, collaborative planning relies on bottom-up stakeholder collaboration as a way to understand current stakeholder values and to reach consensus in near-term action planning, not necessarily for improving the quality of plans and outcomes.

Institutional biases persist in privileging top-down decision making in these large organizations. Few normalized methods for collaborative, “bottom-up” approaches to foresight are recommended in current strategic planning practice. For the purposes of this research, organizational collaboration can be defined as a communicative practice engaging multiple participants working together to realize shared outcomes. Collaboration can be viewed as a spectrum of engagement, from the most elementary forms of “working together” to a deep involvement of participants over an extended period of time, with anticipation and mutual understanding of objectives and values. The purposes of “bottom-up” collaboration are to increase the diversity of perspectives, the novelty of ideation and productive creativity in work practices. The bottom-up style of collaboration is inspired by a democratic notion of engagement where power and status differences are minimized for the sake of productive ideation and effective outcomes for complex or uncertain problem areas.

In the case organization's typical strategic planning meetings, managers engaged the more senior staff and technical advisors. Sessions were facilitated by managers and technical advisors in a process often referred to knowingly, and not pejoratively, as a BOGSATT (“Bunch of guys/gals sitting around the table talking”). Several facilitated approaches to collaborative foresight, including structured brainstorming workshops, Future Search [10], and SDD [11] had been evaluated. SDD is a highly-structured facilitated method that evolved from Interactive Management, based on Warfield's social systems theory and methods [12]. SDD was proposed as a bottom-up, collaborative foresight process to complement the mandated “top-down,” rational planning process, drawing from bench-level staff instead of managers

¹ Structured Dialogic Design (SDD) is a term of art referring to the contemporary form of the methodology practiced as Interactive Management (Warfield and Cardenas, 1994). It is a registered service mark of the non-profit Institute for 21st Century Agoras.

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